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Experimental Investigation on Latent Heat Storage for Space Heating using Concentrated Solar Collectors

C. Arun Sekharan¹, P. Sundaram^{2*}, R. Senthil³

¹Executive Engineer, Innovative Petrochemical Engineering Service Pvt. Ltd.,
Navi Mumbai-400 706, India.

^{2,3} Department of Mechanical Engineering, SRM University,
Kattankulathur-603 203, India.

Abstract: Most of the solar thermal applications operate in non-concentrated and concentrated modes. Thermal energy storage (TES) in solar applications is beneficial to meet the thermal needs. Phase change materials (PCM) are preferred for TES. The selected PCM are Magnesium Chloride hexahydrate and Erythritol. TES is investigated experimentally with air as heat transfer fluid (HTF) and results showed the use of Erythritol gives better performance than $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ due to its higher latent heat.

Keywords: Air dryer, thermal storage, solar collector, phase change materials.

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